Installation Planning

11

Chapter 11

contains all planning data including the required measures to be carried out on site before the machine is delivered.

The section is divided into

- Construction planning data
- Technical connection and performance data
- Safety instructions

MEDICAL IMAGING

CSO Customer Support Operations

Installation Planning

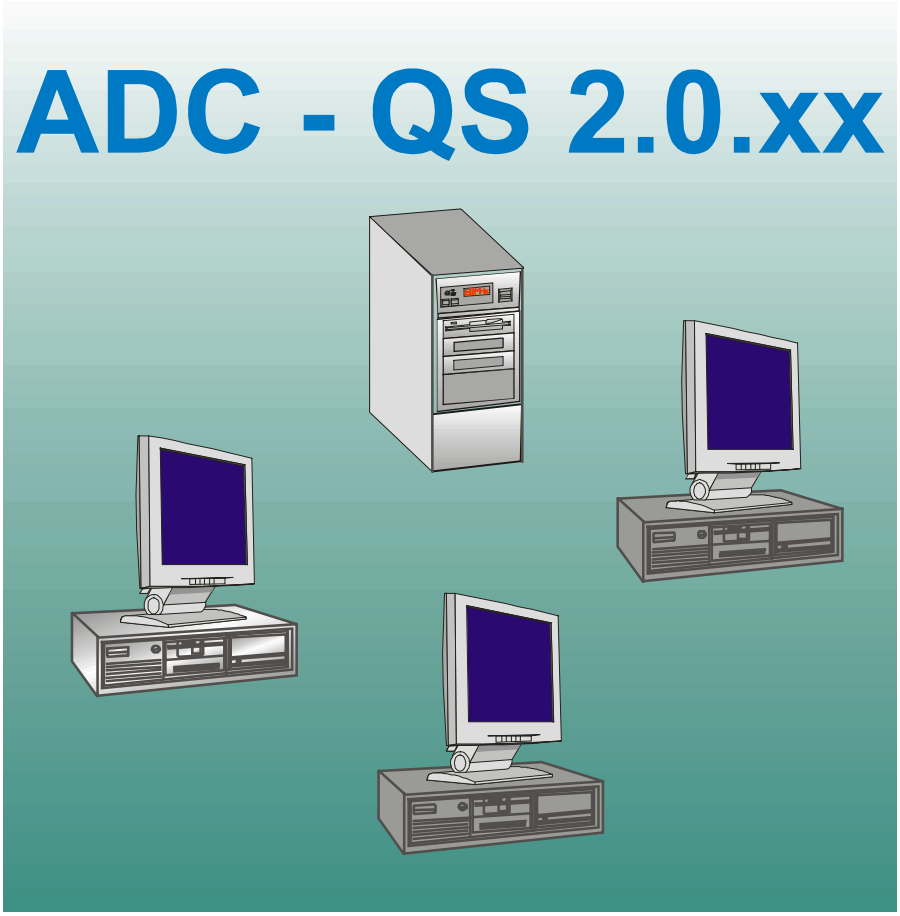
Order-No.: DD+DIS250.01E

1 Piece USASN MA1

ADC Quality System

Type 4406/421

1st edition



This documentation is separately available. DD+DIS250.01E

printed in Germany 11 / 2001

AGFA

Caution:

This system uses high voltage. Please consider the respective safety regulations.

These instructions describe adjustments and routines which must only be performed by qualified technical personnel.

Note:

Electrical repairs and connections must only be performed by a qualified electrician.

Mechanical repairs and connections must only be performed by a qualified technician.

CE Declaration:

The CE Declaration (CE Conformity) becomes invalid if the product is changed without explicit consent of the manufacturer! This applies to all parts, not only to safety elements.

We reserve the right to technical changes

Chapter 11:

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1 General

This document describes the Installation Planning of the ADC QS ID-Station, the ADC QS Client Station and the ADC QS Server Station.
For the Installation Planning of the ADC Digitizers, please refer to the following documents:
ADC Compact Digitizer: DD+DIS288.00E
ADC Solo Digitizer: DD+DIS217.98E

1.1 Safety Instructions

Electrical connections and repairs must only be made by authorized electricians.
Mechanical connections and repairs must only be made by authorized technicians.

For technical data of the commercially available devices as PCs and Workstations please refer to the corresponding user manuals!

1.2 Safety Regulations

The system component ID Tablet is tested in compliance with:

- IEC 950/EN 60950: 1992; A1: 1993; A2: 1993; A3: 1995; A4: 1997.
- UL1950, 3rd edition
- CSA 22.2 No. 950-95, 3rd edition.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communication.

It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart B of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

System Components

When operating the ADC QS System, you should always make sure that the following safety checks have been taken before bringing the System into use:

- do not bypass or disable any incorporated safety features.
- always disconnect any components of the ADC QS System from the mains before carrying out service or maintenance.

AGFA-Gevaert reserves the right to modify and improve their equipment in order to adapt them to the latest technical standards.

There are no user-serviceable parts inside the ADC QS Server Station or the ADC digitizer.

Troubleshooting, as well as electrical or mechanical repairs, may only be carried out by qualified service personnel.

Perform no other operations on the ADC QS Server Station or the ADC digitizer than the ones described in the user manuals.

The only reliable means of protecting the Server Station against blackouts or other potentially damaging events such as power surges and brownouts, is to use the optionally available battery-backed uninterruptible power supply (UPS). The UPS (recommended option) ensures that the electrical flow to the workstation is not interrupted because of a blackout.

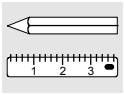
ID Station

The ADC ID Station complies with the UL544 standard for "Non Patient Care Medical Equipment". This means that, although it is absolutely safe, patients may not come into direct contact with the equipment.
Therefore, the ADC ID Station must be placed outside a radius of 1.5 m around the patient.
There are no user-serviceable parts inside the ADC ID Station. Perform no other operations on the ID Station than the ones described in the user manual.

ID Station Monitor

It is not necessary for the user to buy the monitor offered by AGFA. He may use / buy his own monitor. If he does, it should comply with certain criteria to ensure that it can be safely used in combination with the pedestal with regard to stability and securing method.

AGFA monitors are fully compliant.
The maximum size of the monitor is 17 inches.
The foot of the monitor should be such that it may be properly secured to the pedestal with the provided tie-wraps. It is the user's responsibility to ensure this.



ID Station Console

There are no user serviceable parts on the console.
Pay attention when working near the pedestal; the foot projects slightly and could be tripped on.
When rolling the pedestal away from its position, take care not to pull or put any strain on the power lead. The pedestal shelves should not be used as a footrest! If the shelves are re-positioned at a different height, the locking clips should be re-inserted.
If the user prefers to install a monitor other than the one provided / sold by AGFA, he should ensure that it locked to the top shelf of the pedestal at all times, according to the method described in section 1 (Installation) of this manual.
When moving the pedestal, take care to ensure that it remains stable at all times. In particular, the following considerations should be kept in mind: the nature of the floor and any floor-coverings, carpets, etc.; any obstructions such as cables; and any slopes to be negotiated.
Only attach appliances with line voltage equal to that of the ID Station.

1.3 ADC QS System Overview

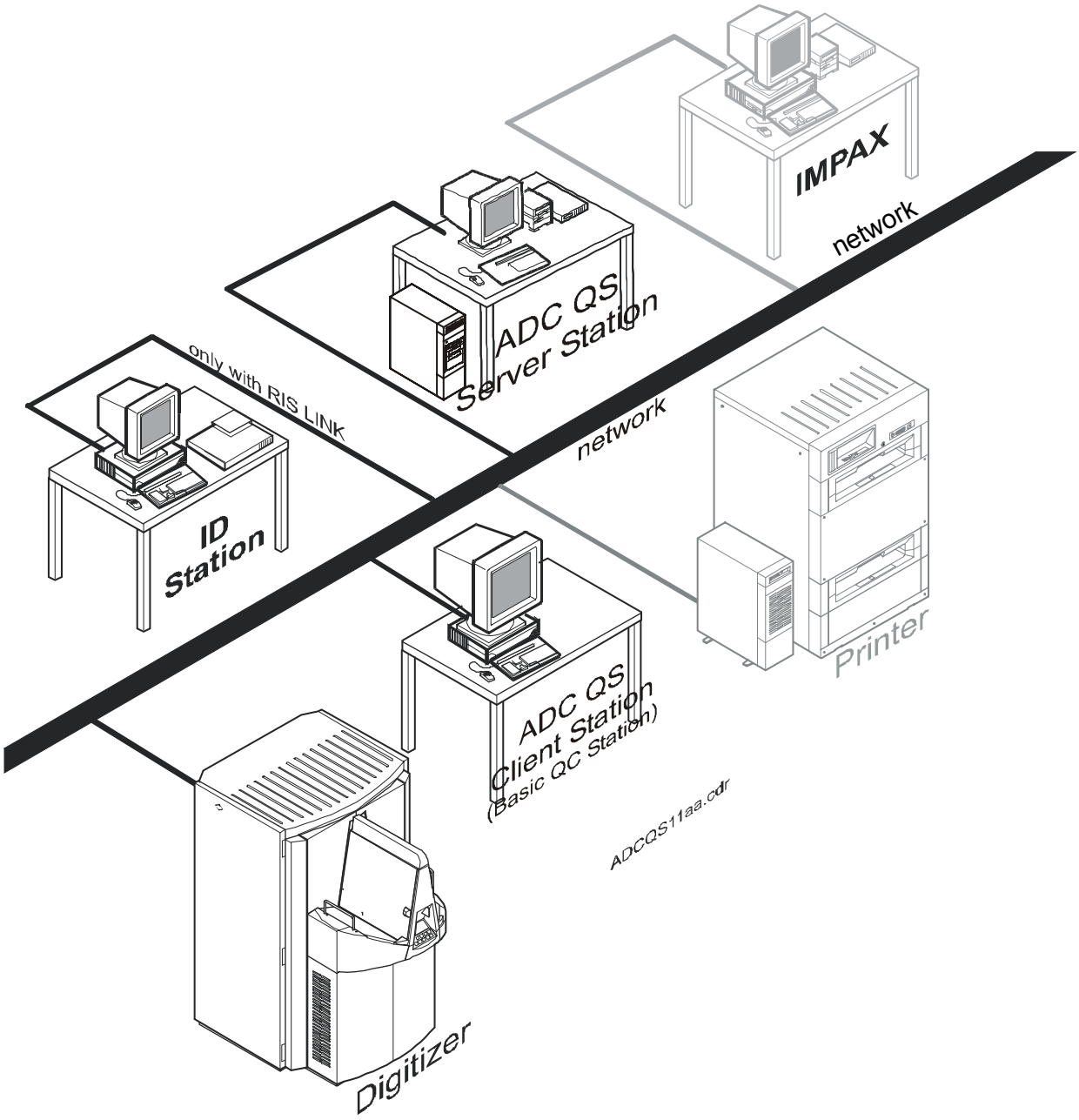


Figure 1

1.4 ADC QS Type List

Basic ADC QS Configuration:

Hard-/Software	Description	Type	ABC - Code
ADC Online-Processing SW	performs a multitude of tasks with the incoming raw data. supplies the user with a basic QC Viewer.	4406 /421	EC5S8
ADC QS PC-Server	DELL Precision 420	4406 / 001	ECZWV

Accessories Software:

Software	Description	Type	ABC - Code
ADC IPD-Viewer	A highly advanced tool for selecting, viewing, local archiving printing and transmitting images	4406 / 423	EC5TB
ADC QC-Viewer	A study oriented viewer for interactive image processing.	4406 / 004	-----
ADC Autorouting	A menu-driven option that sends images to their destinations completely automatically.	4406 / 428	EC5WH
ADC Uro/Tomo	MUSICA processing parameters optimized for urography & tomography examinations.	4406 / 436	EC53U
ADC Pediatric	MUSICA processing parameters optimized for pediatric examinations.	4406 / 435	EC52S
ADC Dental	MUSICA processing parameters optimized for dental examinations.	4406 / 437	EC54W
ADC Smartprint	Extended print functions (e.g. layout editor, etc.)	4406 / 433	EC51Q
ADC Annotation	Option to measure and annotate images on-screen.	4406 / 431	EC5XK
ADC Black Border	Automated semi-transparent masking of collimation borders.	4406 / 432	EC5YM
ADC Multi-Format IMP/EXP	Option that offers the possibility for off-line transmission via media (e.g. DVD)	4406 / 011	EDBS3
ADC DICOM Store Connection	Option that allows to perform on-line transmission in the Dicom standard communication protocol format.	4406 / 426	EC5VF

Not all above mentioned software options are part of the first release ADC QS.

Accessories Hardware:

Hardware	Description	Type	ABC - Code
ADC Standard PC	DELL Optiplex Gx 110+	4406 / 002	ECZXX
ADC VGA Monitor	17" monitor DELL P790-HE Trinitron	4406 / 003	ECZYX
ADC SB1K Monitor	AGFA Standard Brightness Monitor 21"	4406 / 861	3678C
ADC HB1K Monitor	AGFA High Brightness Monitor 21"	4406 / 871	368BL
ADC UPS	Uninterruptible Power Supply	4406 / 890	368CN
ADC Test Phantom Set	for quality control	4406 / 930	37KC3
AGFATEK Link Service Host	for remote access	-----	LDQUT

2 ID Station

2.1 Machine Dimensions ID Station

PC: for dimensions refer to the "Technical Data" of the corresponding PC User Manual.

Cable length ID-Tablet - PC: 2 m.

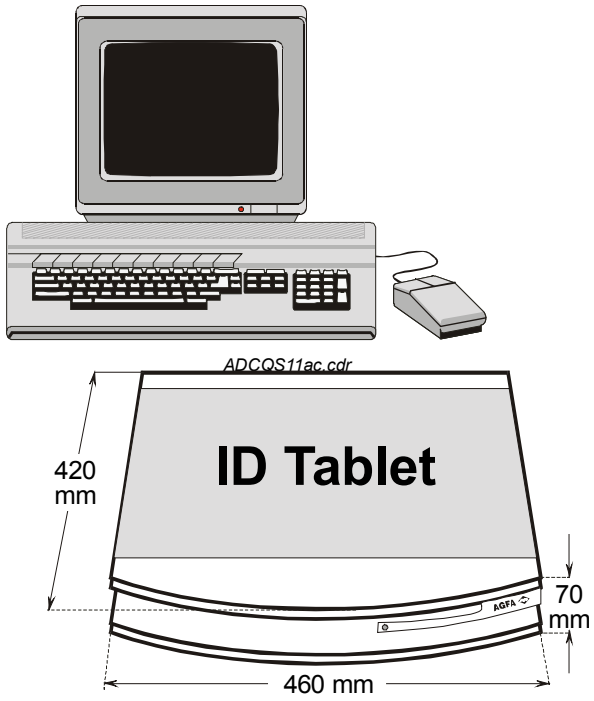


Figure 2

2.2 Machine Dimensions ID Station with Console and Cassette Rack

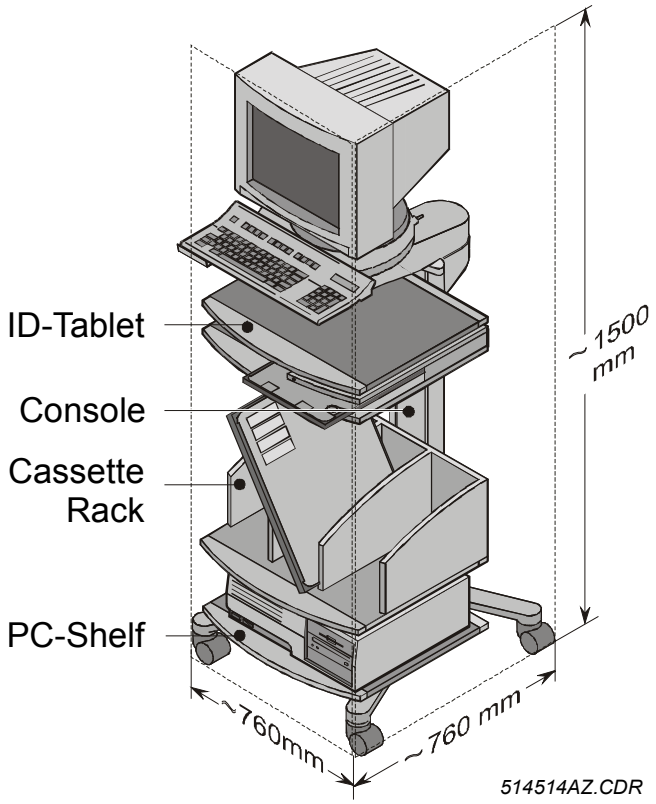


Figure 3

2.3 Technical Data of the ID Station

2.3.1 ID Tablet

Environmental Requirements

The ADC ID tablet must be installed at a site where the following operating conditions can be provided:

- room temperature: minimum 15°C, maximum 30°C
- relative humidity: at a room temperature of 25 °C, minimum 15 %, maximal 75 %.

Power Requirements

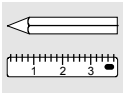
- mains voltage: 100 - 230 V ac
- frequency: 50 - 60 Hz
- max. rated current: 5 A (with appliance outlets loaded to the maximum)
- classification: Class I (grounded)
- fuses: Europe: 5 A slowblow /250V
  North America: 5 A slowblow /125V min
- the equipment is suited for continuous operation.

Power Consumption

ID Station:	PC incl. Monitor	120V ≈ 3A, 230V ≈ 1,6A
	ID Tablet	≈ 0,5 A

Delivery Modalities

The software for the ID Station is separately available (without hardware).



2.3.2 Hard- and Software Requirements for the ID Station

Hardware (*)	**Operating System**
DELL Midsize Desktop Optiplex GX110+ P3/600 MHz processor / 512 Kb Cache Intel 810E Chipset Internal floppy 3.5", 1.44 MB 3.5 @ FD/EIDE CD ROM Monitor 17" SVGA 256 MB 100 MHz SDRam 13.6 GB ATA66 EIDE HDD single head Matrox G200 / 16 MB graphics board country specific keyboard + wheel mouse + mouse pad network connection board: 10/100 mbit autosensing	**Windows NT 4.0 Workstation + Service Pack 5**

(*) This is the only hardware configuration that has been tested by AGFA. Therefore we strongly recommend to purchase the PC from AGFA. These PCs are staged in AGFA and all software is pre-loaded.

2.3.3 Electrical Connections

Mains connection	
Connection to an outlet	3 x 100 - 120 V / 230 - 240 V, 50 - 60 Hz
External fuse protection	min. 6 A slowblow, max. 16 A slowblow
Connection cable	Euro: 3 x H05VV - 3 x 1.5 mm², with grounded pin plug, cable length 2.5m US: cable SJT, 3 x AWG 18 with NEMA 5-15P, cable length 2.3m
Interface connections	1 x RS 232/9P for the ID tablet + 1 x mouse 1 x network connection (Ethernet) for RIS LINK (Option)

2.3.4 Environmental Requirements for the PC:

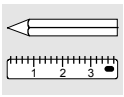
Temperature	10° -35°C;	50° - 95°F
Humidity	8 - 90%	

2.3.5 Packing Dimensions

ID STATION incl. ID Tablet	L x W x H: 33 x 58 x 55 cm
17" Monitor	L x W x H: 58 x 58 x 54 cm
ID Console	L x W x H: 84 x 84 x 143 cm
Rack	L x W x H: 48 x 44 x 29 cm

2.3.6 Weights

ID Tablet	with box: without box:	≈13 kg ≈ 9 kg
ID Station PC	with box: without box:	≈ 16 kg ≈ 15 kg
ID Console	with box: without box:	≈ 43 kg ≈ 21 kg



3 ADC QS Client Station (Basic QC Station) - DELL "Optiplex GX 110+"

3.1 Technical Data of the ADC QS Client Station

3.1.1 Hard- and Software Requirements for the Client Station

Hardware (*)	**Operating System**
DELL Midsize Desktop Optiplex GX110+ P3/600 MHz processor / 512 Kb Cache Intel 810E Chipset Internal floppy 3.5", 1.44 MB 3.5 @ FD/EIDE CD ROM Monitor 17" SVGA 256 MB 100 MHz SDRam 13.6 GB ATA66 EIDE HDD single head Matrox G200 / 16 MB graphics board country specific keyboard + wheel mouse + mouse pad network connection board: 10/100 mbit autosensing	**Windows NT 4.0 Workstation + Service Pack 5**

(*) This is the only hardware configuration that has been tested by AGFA. Therefore we strongly recommend to purchase the PC from AGFA. These PCs are staged in AGFA and all software is pre loaded.

3.1.2 Power Consumption

Client Station (PC incl. Monitor)	120V ≈ 3A, 230V ≈ 1,6A

3.1.3 Electrical Connections

Mains connection	
Connection to an outlet	3 x 100 - 120 V / 230 - 240 V, 50 - 60 Hz
External fuse protection	min. 6 A slowblow, max. 16 A slowblow
Connection cable	Euro: 3 x H05VV - 3 x 1.5 mm², with grounded pin plug, cable length 2.5m US: cable SJT, 3 x AWG 18 with NEMA 5-15P, cable length 2.3m
Interface connections	1 x network connection (Ethernet) for RIS LINK (Option)

3.1.4 Environmental Requirements for the PC:

Temperature	10° -35°C 50° - 95°F
Humidity	8 - 90%

3.1.5 Packing Dimensions

Client Station PC	L x W x H: 61 x 58 x 43 cm
17" Monitor	L x W x H: 58 x 58 x 54 cm

3.1.6 Weights

Client Station PC	with box: without box:	≈ 16 kg ≈ 15 kg

4 ADC QS Server Station – DELL Precision 420

4.1 Transport Path

It must be possible to transport the components of ADC QS through all hallways and doors up to the installation site.

Minimum Doorwidth: 60 cm

4.2 Technical Data of the ADC QS Server Station

4.2.1 Hard- and Software Requirements for ADC QS - Server

Hardware (*)	**Operating System**
DELL Single Precision 420 (Tower) P3/600 MHz processor Monitor 21", gray scale monitor (AGFA SB or HB monitor). Internal floppy 3.5", 1.44 MB CD-ROM/FD Drive 4 x 128 Mb SDRAM 2 x 9.1GB hard disks, 1.000rpm Matrox Millenium G400 graphics board country specific keyboard + wheel mouse + mouse pad network connection board: 10/100 mbit autosensing	Windows NT Server + Service Pack 5

(*) This is the only hardware configuration that has been tested by AGFA. Therefore we strongly recommend to purchase the PC from AGFA. These PCs are staged in AGFA and all software is pre loaded.

4.2.2 Power Consumption

ADC QS Server Station	120V ≈ 4A, 230V ≈ 2A

4.2.3 Electrical Connections

Mains Connection	
Connection to an outlet *	2 x 100 - 120 V / 230 - 240 V, 50 - 60 Hz
External fuse protection	Minimum 6 A slowblow, maximum 16 A slowblow
connection cable	2 x H05VV - 3 x 1.5 mm² with grounded pin plug, mains cable length approx. 2.3 m
Interface connection	1 x network connection (Ethernet)

***** If UPS is used, only one mains connection is necessary. All other devices are connected to UPS.

4.2.4 Connection Cables of the Individual System Components

If required, the following network connection cables may be ordered separately for the ADC QS Server Station.

ABC code	Network cable	Length
31D3F	UTP-cable, (unshielded twisted pair connection cable for ethernet 10 base-T)	5 m
31D4H	UTP-cable, (unshielded twisted pair connection cable for ethernet 10 base-T)	50 m
31D5K	UTP-cable, (unshielded twisted pair connection cable for ethernet 10 base-T)	100 m

The Ethernet cables of the system components should be positioned on the floor or along the wall in a cable duct.

4.2.5 Packing Dimensions

ADC QS Server Station	W x D x H / cm: W x D x H / in:	66 x 59 x 45 26" x 23" x 18"
AGFA standard brightness monitor	W x D x H / cm: W x D x H / in:	120 x 80 x 90 47" x 31.5" x 35.5"
AGFA high brightness monitor	W x D x H / cm: W x D x H / in:	120 x 80 x 90 47" x 31.5" x 35.5"

4.2.6 Weights

ADC QS Server Station	with box: without box:	≈ 29 kg ≈ 27 kg
AGFA standard or high brightness monitor	without box:	≈ 30,5 kg

5 Monitors

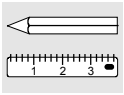
5.1 Technical Data of AGFA Standard Brightness Monitor

Synchronization	Horizontal scan rate	48 to 108 kHz (automatic adjustment)
	Vertical scan rate	60 to 80 Hz (automatic adjustment)
Input Signals	ECL digital	D-Sub 25 pin connector (1, 2 or 4 bits per pixel)
	Analog	3 BNC connector (composite on video or separate sync.) 13W3 and other connectors optional
CRT Specifications	Screen size	21“ FS
	Phosphor	P104 (other options available)
	Non-glare AR panel	Optional
	Display mode	Non-interlaced
Display Area	Horizontal width	16“ max (user adjustable)
	Vertical height	12“ max (user adjustable)
Video	Video band width	200 MHz (up to 300 MHz optional)
Resolution	Horizontal	1024 to 2048
	Vertical	768 to 1536
	Brightness	65 Footlamberts nominal HRMS™ allows the monitor to adjust automatically to a range of horizontal and vertical scan frequencies, providing compatibility with many hi-res display controllers for PC, PS/2, MAC, Sun, Apollo, DEC, Silicon Graphics and other workstations.
User Controls	Side	Power, Brightness and Contrast Controls
	Rear	Height, vertical position, width, horizontal position

Dimensions	Height	cm: 42 (48 with tilt-swivel base) in:16.5“ (19“ with tilt-swivel base)
	Width	cm: 49.5 in:19.5“
	Depth	cm: 48 in:19“
	Weight	kg:21.7 (24.9 with tilt-swivel base) lbs.: 48 (55 lbs. with tilt-swivel base)
Power Supply	Power consumption	100 Watts
	Input voltage	90 to 130 VAC, 220 to 250 VAC
	Input frequency	47 to 63 Hz

5.2 Technical Data of AGFA High Brightness Monitor

Power Requirements	Input voltage	90 – 264 V wide range power supply
	Power frequency	47 – 65 Hz
	Power consumption	150 Watts max.
	Power factor control	According to IEC 1000
	Power saving	According to VESA DPMS
CRT Specifications	Size	21“ flat square
	Deflection angle	90°
	Light transmission	30 %
	Phosphor type	P45, cadmium free
	Surface	Multicoated conductive panel (AR / AS)
	Gun system	Dispenser cathode (long life)
	Focusing	Static and dynamic
General Performance	Horizontal frequency	30 to 83 kHz
	Vertical frequency	50 to 120 Hz
	Formats	19 max., self recognizing and autosensing
Display Performance	Display Area (W x H)	400 mm x 300 mm
	Non-linearity	≤ 2 %
	Raster stability	0.05 mm max. swim & jitter
	Maximum brightness	≥ 175 ftL @ 1 V_{pp} input signal
	High voltage regulation	0.2 % max. size change



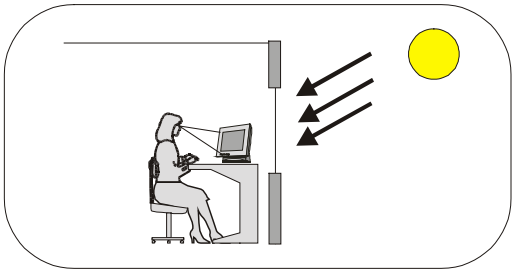
Video Amplifier, Inuts	Bandwidth	140 MHz @ 80 V modulation
	Rise & fall times	3 ns
	Connectors	BNC type
	Impedance	75 Ohms
	Video level	0.75 to 1.2 V_{pp}
	Sync. level	0.1 to 0.6 V_{pp}
Front Panel Controls	Controls	Power on / off, contrast / brightness
	Geometry	H/V-phase, H / V-amplitude, pin & barrel, raster rotation
	Ambient light sensor	For automatic contrast control
Operating Conditions	Temperature operating	+10 °C to +35 °C
	Storage	-25 °C to +70 °C
	Humidity operating	20 % to 80 % rel. humidity
	Storage	20 % to 80 % rel. humidity
Mechanical Specifications	Dimensions (WxDxH)	499 mm x 520 mm x 476 mm
	Weight	≈ 30.5 kg
Approvals	Safety	UL 1950, CSA, IEC 950, EN 60 950, DHHS
	EMC	IEC 601-1-2
	Radiation	MPR II
	Others	CE mark, TÜV-ergo (optional), ISO 9001 certified plant

5.3 Correct Position of Monitors

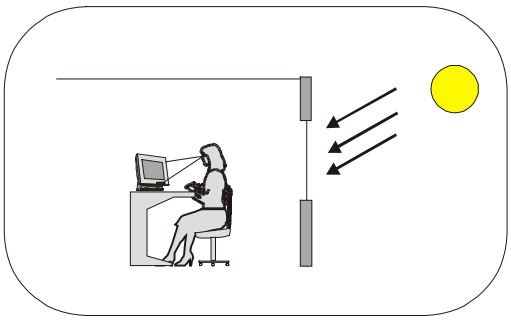
When choosing a site for the ADC QS System, observe the following principles for positioning monitors:

- prefer working parallel to a window.

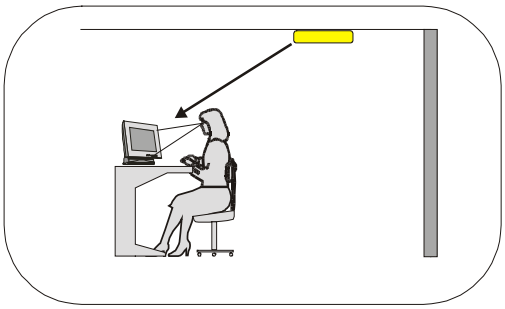
- avoid sitting opposite a window.



- avoid reflections through direct sunlight.



- avoid reflections from a light source in the room (e.g. lamps, light box).



For detailed information on ergonomic working conditions, please consult the respective local regulations.